

Claims

[c1]

What is claimed is:

1.A method for performing ciphering in a wireless communications system, the wireless communications system comprising a base station in wireless communications with a mobile unit, the base station capable of transmitting protocol data units (PDUs) to the mobile unit and receiving PDUs from the mobile unit using a packet switched (PS) domain or a circuit switched (CS) domain, the method comprising:

providing the mobile unit with a first ciphering status variable for the PS domain, and a second ciphering status variable for the CS domain;

the base station transmitting a security mode command to the mobile unit indicating an activation or deactivation of ciphering of the PDUs in the PS domain, or indicating an activation or deactivation of ciphering of the PDUs in the CS domain; and

the mobile unit setting the first ciphering status variable according to the security mode command if the security mode command indicates an activation or deactivation of ciphering of the PDUs in the PS domain, and setting the second ciphering status variable according to the security mode command if the security mode command indicates an activation or deactivation of ciphering of the PDUs in the CS domain;

wherein after setting the first ciphering status variable or setting the second ciphering status variable, the mobile unit activates or deactivates ciphering of PDUs transmitted in the PS domain according to the first ciphering status variable and activates or deactivates the ciphering of PDUs transmitted in the CS domain according to the second ciphering status variable.

[c2]

2.A method for handling ciphering in a wireless communications system, the wireless communications system comprising a base station in wireless communications with a mobile unit and capable of establishing a packet switched (PS) domain connection between the base station and the mobile unit and capable of establishing a circuit switched (CS) domain connection between the base station and the mobile unit, the method comprising:

providing the mobile unit with a first ciphering status variable for the PS

domain, and a second ciphering status variable for the CS domain;
the mobile unit setting the first ciphering status variable to indicate ciphering is deactivated for the PS domain if establishing a PS connection with the base station when no other PS connections exist; and
the mobile unit setting the second ciphering status variable to indicate ciphering is deactivated for the CS domain if establishing a CS connection with the base station when no other CS connections exist;
wherein after setting the first ciphering status variable or setting the second ciphering status variable, the mobile unit activates or deactivates ciphering of PDUs transmitted in the PS domain according to the first ciphering status variable, and activates or deactivates the ciphering of PDUs transmitted in the CS domain according to the second ciphering status variable.

- [c3] 3.A mobile unit for a wireless communications system, the wireless communications system comprising a base station in wireless communications with the mobile unit and capable of establishing a packet switched (PS) domain connection between the base station and the mobile unit and capable of establishing a circuit switched (CS) domain connection between the base station and the mobile unit, the mobile unit comprising:
- a memory for storing ciphering information, the memory comprising a first ciphering status variable for indicating whether or not ciphering is to be used for data transmitted over an established PS domain connection, and a second ciphering status variable for indicating whether or not ciphering is to be used for data transmitted over an established CS domain connection; and
 - a processing circuit electrically connected to the memory for performing ciphering such that if the first ciphering variable is set to a first predefined value, data transmitted over an established PS domain connection is not ciphered, if the first ciphering variable is set to a second predefined value, data transmitted over an established PS domain connection is ciphered, if the second ciphering variable is set to the first predefined value, data transmitted over an established CS domain connection is not ciphered, and if the second ciphering variable is set to the second predefined value, data transmitted over an established CS domain connection is ciphered.